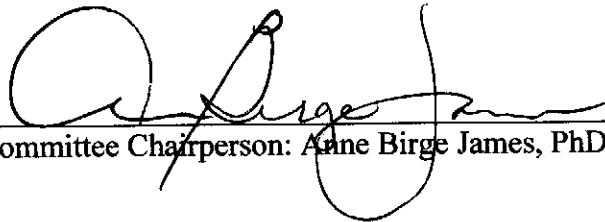


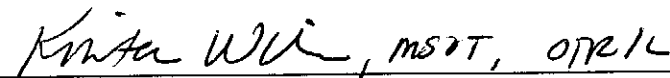
The Learning Alliance Between Clinical Instructors and Students at
a Campus Occupational Therapy Teaching Clinic: Support for the Development of
Clinical Reasoning

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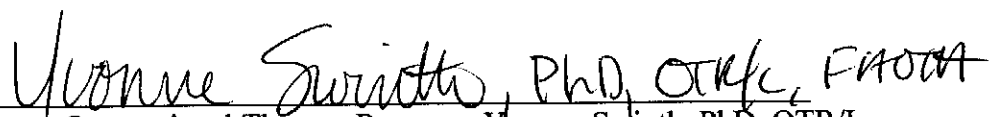
This research, submitted by Sarah Hunt, has been approved and accepted
in partial fulfillment of the requirements for the degree of
Master of Science in Occupational Therapy from the University of Puget Sound.



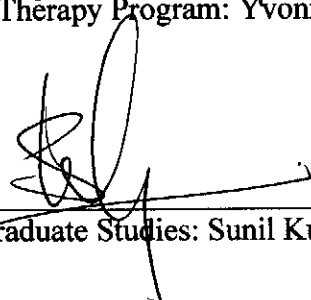
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Abstract

In order to practice as an occupational therapist, students must complete clinical educational experience as part of their graduation requirements. During this experience, a supervising clinical instructor (CI) provides feedback and guidance that builds the foundation for clinical reasoning skills of the student. The CI-student learning alliance represents the relationship that supports this educational experience. This study used qualitative methodology based in grounded theory to examine the role of the CI-student learning alliance in facilitating students' development of clinical reasoning by studying the relationship between CIs and fourth semester graduate occupational therapy students during a level I fieldwork experience at a university on-campus teaching clinic. Five themes emerged from the data including: 1) Clinical Instructors Assessed How a Student Learns Best; 2) Clinical Instructors Used Different Ways to Facilitate the Clinical Reasoning Process and the Learning Alliance; 3) The Nature of Feedback was Important; 4) Students Took a Positive, Active Approach to Learning; and 5) Student Autonomy was Preserved. The themes that emerged appeared to simultaneously support the learning alliance and the development of clinical reasoning. This information may provide CIs and occupational therapy students with a better understanding of strategies used in fieldwork settings that contribute to the development of an effective CI-student learning alliance and the development of students' clinical reasoning.

The Learning Alliance Between Clinical Instructors and Students at
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Clinical education plays a critical role in the development of an occupational therapist. Although the clinical education experience may vary based on the academic institution, in the U.S., the American Occupational Therapy Association (AOTA) Accreditation Council for Occupational Therapy Education (ACOTE) requires that graduate occupational therapy students in an accredited occupational therapy program complete a minimum of 24 weeks of full-time practice based fieldwork as part of the academic program (AOTA, 2010). It is through this clinical experience that students are challenged to apply their knowledge and skills acquired as part of their theoretical academic background to develop treatment approaches within the context of a clinical practice setting (AOTA, 2009).

The appropriate application of the student's academic knowledge to the practice setting requires clinical reasoning skills. Clinical reasoning, also referred to as professional reasoning, is defined as "the process that practitioners use to plan, direct, perform, and reflect on client care" (Schell, 2009, p. 314). The metacognition involved in clinical reasoning has been widely described as a skill best acquired through experience (Cohn, 1989; Fleming, 1991b; Gibson et al., 2000; Mattingly, 1991; Schell, 2009; Schell & Cervero, 1993). Gibson et al. (2000) used an ethnographic study to investigate how the clinical reasoning process differed between an experienced and novice therapist at the same setting. The authors noted that the novice therapist discussed the concept of clinical reasoning readily, whereas the experienced therapist struggled to define the concept.

However, the actual application of the concepts of clinical reasoning was more apparent during the interviews with the experienced therapist (Gibson et al., 2000). This study illustrated how the development of clinical reasoning skills evolves as a therapist gains experience.

Fieldwork plays a significant role in establishing a foundation for a student's clinical reasoning skills (Cohn, 1989; Farber & Koenig, 2008). In the fieldwork setting, the occupational therapy student is supervised by a fieldwork educator, or clinical instructor (CI), a licensed occupational therapist who is responsible for the student's clinical learning experience. The CI plays a considerable role in the student's development of competence to practice (Housel, Gandy, & Edmondson, 2010). Throughout the fieldwork experience, the student receives guidance and feedback from the CI on evaluation and intervention as the student begins to build clinical reasoning skills. This feedback process serves to support the success of the student within the context of the clinical setting as the two strive towards the common educational goal of developing the student's clinical reasoning skills.

The relationship between the CI and the student may impact the student's professional development during fieldwork, and a successful relationship becomes important for facilitating effective communication in the clinical setting. James (2005) proposed a model of self-regulated fieldwork learning that students and CIs might use as a guide in understanding successful learning strategies utilized during fieldwork education. One component of the model, the learning alliance, supports the translation of knowledge between the student and CI. "A learning alliance is defined as the relationship between the student and clinical supervisor, which consists of mutually agreed upon

learning goals and tasks, a shared understanding of the learning process, and a positive relationship” (James, 2005, p. 137). Currently, it is not known which aspects of the learning alliance contribute to the development of clinical reasoning. Additional research would enhance understanding about this aspect of fieldwork education and support the occupational therapy profession’s commitment to developing and graduating competent future practitioners.

The University of Puget Sound in Tacoma, Washington operates a free on-campus clinic for the local community in which fourth semester graduate occupational therapy students, under the supervision of faculty and CIs, plan and implement treatment for both adult and pediatric clients. The on-campus clinic provides a fieldwork level I education experience for students, prior to beginning their fieldwork level II experiences. For students, this unique clinical setting located at the university serves as the beginning of the transition from the classroom to applied clinical practice. In addition, the on-campus clinic with the support of the department faculty provides a more controlled setting in which the relationship between the student and CI might be explored.

Background

In her Eleanor Clarke Slagle lecture, Rogers (1983) drew attention to clinical reasoning as the heart of the occupational therapy process. She discussed the scientific, ethical and artistic dimensions unique to the clinical reasoning of occupational therapists. The conceptual framework she described focused on clinical inquiry in practice and how clinical reasoning contributes to engagement in occupation as client outcomes. At the time of this lecture, little research had been dedicated to understanding the thinking that

guides occupational therapy practice or how occupational therapists develop their unique reasoning process and this seminal lecture served to establish a need for more research.

Clinical reasoning. Five years after Rogers' lecture, the American Occupational Therapy Foundation (AOTF) and AOTA, in an effort to better understand clinical reasoning in occupational therapy, jointly supported the Clinical Reasoning Study to investigate the reasoning processes used by therapists (Fleming, 1991a; Fleming, 1991b; Gillette & Mattingly, 1987; Scaffa & Smith, 2003; Schell & Cervero, 1993; Schwartz, 1991). The results from the study described the complex nature of clinical reasoning and showed that therapists utilized various types of reasoning techniques such as procedural, interactive and conditional reasoning to guide treatment and reduce the impact of disability on a client's life (Fleming, 1991b). Procedural reasoning involves the therapist determining the appropriate strategies that focus on the client's diagnosis, interactive reasoning focuses on the client's perspective, and conditional reasoning is a combination of reasoning techniques utilized in helping the patient plan for the future in consideration of the impact of illness or disability in the currently available environments (Fleming, 1991b; Schell, 2009). Similarly, Mattingly (1991) asserted that as occupational therapists individualize a treatment approach, they are utilizing clinical reasoning based on the context of the client's dynamic occupational needs.

More recently, additional types or aspects of clinical reasoning have been identified. Scientific reasoning involves the use of logical methods and hypothesis testing in making treatment decisions (Schell, 2009). Narrative reasoning approaches treatment decisions using the circumstances specific to the client, often utilizing the client's story in the process (Hamilton, 2008). Pragmatic reasoning is focused more on the practical

aspects of occupational therapy practice, such as scheduling, payment, and equipment availability (Schell, 2008). Ethical reasoning is used when dilemmas regarding principles and risks arise in occupational therapy practice (Kanny & Slater, 2008). These aspects of clinical reasoning are not independent of each other. Instead, the varied types of reasoning work together during occupational therapy practice.

The research in clinical reasoning has impacted occupational therapy education by providing educators with a clearer understanding of how clinicians frame and solve clinical problems. In her review of clinical reasoning teaching strategies, Neistadt (1996) suggested that by introducing clinical reasoning concepts to students during their academic programs, the students might have a better understanding of clinical reasoning processes they experience during fieldwork education and, by implication can be more reflective during field-based experiences, which may speed their development of clinical reasoning. Through the completion of classroom and fieldwork education, the foundation for clinical reasoning is developed and the student is prepared to enter the profession as an entry-level therapist (Cohn, 1989; Scaffa & Smith, 2003).

Fieldwork education is the part of the occupational therapy curriculum where students first apply knowledge and skills gained in the academic setting to authentic clinical experiences (AOTA, 2009). Researchers have investigated how clinical reasoning skills change over the course of the fieldwork experience. Scaffa and Smith (2003) found that clinical reasoning skills had increased in students after completion of the 24-week full-time level II fieldwork experience as determined by scores on the Self-Assessment of Clinical Reflection and Reasoning. This study utilized a convenience sample of students

who completed a self-report assessment at the beginning and end of their fieldwork experience (Scaffa & Smith, 2003).

Coates and Crist (2004) also found that clinical reasoning skills increased as a result of fieldwork experience as demonstrated in a study that evaluated videotapes of fieldwork students performing an assessment at the beginning of their fieldwork placement, and again at the end of their fieldwork placement. The authors, based on predetermined indicators of performance behaviors, independently performed a qualitative analysis of the videotapes. The authors noted that this study was an evaluative pilot study on a small sample of students, and replication of the study is needed to strengthen the findings (Coates & Crist, 2004).

Sladyk and Sheckley (2001) used the Clinical Reasoning Case Analysis Test (CRCAT), developed by the first author, to measure clinical reasoning skill development during level II fieldwork and found a statistically significant increase in students' reasoning skills. However, their hypothesis that students' engagement in reflective learning activities would be positively related to gains in clinical reasoning was not supported, suggesting that the development of clinical reasoning may be a more complex process. The results of this study were based on students completion of the CRCAT both before and after their completion of one 12-week fieldwork II experience, and did not explore other variables that could impact the students development of clinical reasoning such as the students level of engagement in reflective learning activities, or the relationship between the students and their CIs. In addition, the study focused on a sample of students from one region of the U.S., suggesting that further research is needed to generalize the findings of this initial evaluative study (Sladyk & Sheckley, 2001).

Studies that have explored the development of clinical reasoning skills during fieldwork education support the critical role clinical education plays in the development of occupational therapy students. The development of clinical reasoning skills is based in fieldwork education, but these skills are enriched and refined, and to some extent rendered sub-conscious through experience as an occupational therapy practitioner.

Clinical instructor - student learning alliance. The studies cited above provide evidence that clinical reasoning is developed during fieldwork, however these studies did not determine the teaching and learning strategies that best facilitate students' development of clinical reasoning. Farber and Koenig (2008) explored strategies within the student and supervisor relationship that might facilitate better reasoning for students. For instance, they reported that CIs foster clinical reasoning by using guided questioning strategies to encourage the student to solve problems. The goal of this strategy is not only to encourage the student to reason through the situation, it also allows the CI to understand the current level of knowledge of the student (Farber & Koenig, 2008).

Using qualitative research, James (2005) developed a theoretical model of self-regulated field-based learning within the context of occupational therapy level II fieldwork settings. One component of the model was that students adopted a metacognitive stance in their approach to fieldwork education. A flexible metacognitive stance enabled the students to modify their approach to learning based on the student's perceived level of competence as well as their understanding of the learning task. When the metacognitive stance was most effective, or when students might learn the best, was when they were able to accurately assess their abilities within the context of the learning environment, and determine the appropriate level of assistance required in order to

achieve the learning goal. Some learning tasks require more assistance than others, and the level of assistance includes both independent learning strategies, as well as assisted learning, typically utilized through the student's CI (James, 2005). Within the framework of the model, the metacognitive stance taken by the students contributed to the promotion of a learning alliance. James (2005) described the development and management of the CI-student relationship, or learning alliance, as a critical component to student learning. Students identified strategies to promote interaction with their CIs as important for developing and maintaining a positive learning experience, such as requesting feedback and assistance, or verbalizing their observations and ideas to their CIs (James, 2005). A positive learning alliance was achieved when both the student and the CI actively managed the relationship in a way that supported learning. This required the student to express his or her learning needs to the CI, and for the CI to provide feedback to support the learning goals (James, 2005). When these strategies were utilized, students considered the CI supportive of their development. One limitation of James' study was that it looked at student performance overall in fieldwork from the student perspective, and did not as extensively from the CI perspective. In addition, the study did not focus on outcomes related to clinical reasoning.

The learning alliance appears to have an important influence on the development of the clinical reasoning skills of the student. When developing intervention plans, the experienced CI is able to draw upon prior knowledge that the occupational therapy student or novice therapist has yet to acquire. With this knowledge, experienced clinicians are able to confidently assess the appropriate treatment for a client, whereas a student presented with the same information, lacks the experience and will struggle to

develop an appropriate treatment (Robertson, 1996). Challenges such as these faced by the student in the fieldwork setting provide students and CIs with learning opportunities that may promote clinical reasoning skills and progress the student towards proficiency in entering the profession (Bonello, 2001; Buchanan, Moore, & van Nierkerk, 1997; Cohn & Crist, 1995). The ways in which students and CIs can work together to create a relationship that best supports a collaborative approach to teaching and learning clinical reasoning skills has not been described in the literature.

Further research is needed to document how the CI and the student coordinate in developing a base for the student's clinical reasoning skills. A better understanding of the collaboration between the CI and the student during fieldwork would serve to improve and support the profession's commitment to the education of future practitioners. Therefore, the purpose of this study is to examine the role of the CI-student learning alliance in facilitating students' development of clinical reasoning by studying the relationship between CIs and fourth semester graduate occupational therapy students at a university on-campus teaching clinic.

Method

Qualitative methods based in grounded theory were used for this study of CIs and their students. The goal of a grounded theory approach is to develop insight based on the data, in the form of theories that emerge as the data are analyzed (Strauss & Corbin, 1998). Unstructured observations during clinical treatment sessions and corresponding group feedback sessions were utilized to examine the interactions between the CI and student within the educational clinical setting. Following the unstructured observations, two focus groups were held to interview the CIs and students respectively in an effort to

determine factors of the CI-student learning alliance that contribute to the development of clinical reasoning. One benefit of using focus groups as a research methodology is that data may emerge as a result of the interaction of the group members during the interview (Luborsky & Lysack, 2006). Data were analyzed with minimal interference from the assumptions of the student researcher in an effort to better understand the meaning of the experiences of the participants.

Participants

A convenience sample of three CIs and six fourth semester graduate occupational therapy students at the University of Puget Sound Occupational Therapy Clinic in the spring 2013 semester were interviewed during two separate focus groups, one made up of CIs and one of occupational therapy students. CIs were eligible to participate in this study if they had worked for at least one previous spring semester at the on-campus clinic. The CIs for the student researcher were excluded from participation. Students were eligible to participate in this study if they were students of one of the CIs enrolled in the study.

Procedures

After the University's Institutional Review Board approved the proposal for the study, a request for volunteers was sent via email to all CIs participating in the spring 2013 campus clinic that met the inclusion criteria. Prior to data collection, the student researcher engaged in practice observations during clinical treatment and group feedback sessions at the on-campus clinic, and conducted a practice focus group with two faculty members and a CI not participating in the study in order for the student researcher to develop observation and interview skills.

Prior to beginning data collection, the student researcher obtained signed, informed consent from the participating CIs and students. The student researcher collected data from observations of each of the CIs and student participants during one clinical treatment session and the corresponding group feedback sessions of two of the CI-student triads. Due to the student researcher's coursework schedule, the research advisor observed one of the group feedback sessions. The researchers maintained field notes during the treatment and group feedback sessions and the student researcher began a field journal to document personal reactions and manage her subjectivity. This field journal was maintained throughout the research study.

Following the clinic and group feedback session observations, two focus groups commenced: one focus group for CI participants, and another for student participants. Participants in each group were asked to provide their perspective regarding ways in which the CI-student relationship supports the development of clinical reasoning in clinical educational settings. Guiding questions were used throughout the focus groups to elicit factors that contribute to the CI-student learning alliance and students' development of clinical reasoning (see Appendix).

The dialogue from the two focus groups was audio-recorded and the contents were transcribed verbatim by a professional transcriptionist and reviewed for accuracy by the student researcher. Immediately following each focus group, the student researcher completed field notes to reflect on and provide context to the focus group, and record any personal reactions that occurred over the course of the focus group. Observational notes and transcripts were recorded with pseudonyms to ensure written data was free of identifying information.

Data Analysis

Transcribed data from the focus groups, clinical observational notes and field notes were analyzed during and following data collection. These data were organized into similarities and differences, which were then more broadly categorized into patterns of concepts (Strauss & Corbin, 1998). A code-recode technique was utilized to verify the identified themes. This involved taking multiple passes through the transcripts, over a course of multiple weeks, providing time for the student researcher to confirm or modify the original coding of the data. Credibility was improved using peer checking for portions of the transcript with an experienced qualitative researcher. In addition, the student researcher and research advisor reviewed the contents of the field notes and reflections to examine whether the student researcher's personal bias influenced the developing themes. Potential biases were discussed with the research committee throughout the data analysis process. The set of themes that emerged from this analysis were compared with the observations noted during the clinic treatment and group feedback sessions of the participants for similarities and differences, as well as new phenomena not addressed during the participant focus groups. Member checking via email with the nine participants was done to further promote rigor. Finally, a research committee reviewed the findings both individually and together with the student researcher.

Results and Discussion

Three female CIs and six female graduate occupational therapy students participated in the study to examine the role of the CI-student learning alliance in facilitating students' development of clinical reasoning. The teaching experience of the participating CIs at the on-campus clinic ranged from 8-14 years, with a range of 20-29

years of experience as practicing clinicians. Of the three CIs, one identified her ethnicity as Asian, while the other two identified their ethnicity as European American. The six students enrolled in the study were recruited based on the enrollment of their respective CI in the study, with a triad of two students for each one of the CIs (see Table 1). All students were graduate occupational therapy students within their final semester of academic coursework. The ages of the students ranged from 23-30 years old. Four of the students identified their ethnicity as European American. One student identified hers as Japanese, and another student identified hers as Chinese and White.

Through repeated examination of the data collected from focus group transcripts, clinical observation and field notes, the themes that emerged in this study appeared to simultaneously support the learning alliance and the development of clinical reasoning. Five themes, presented in Figure 1, were identified; 1) Clinical Instructors Assessed How a Student Learns Best; 2) Clinical Instructors Used Different Ways to Facilitate the Clinical Reasoning Process and the Learning Alliance; 3) The Nature of Feedback was Important; 4) Students Took a Positive, Active Approach to Learning; and 5) Student Autonomy was Preserved.

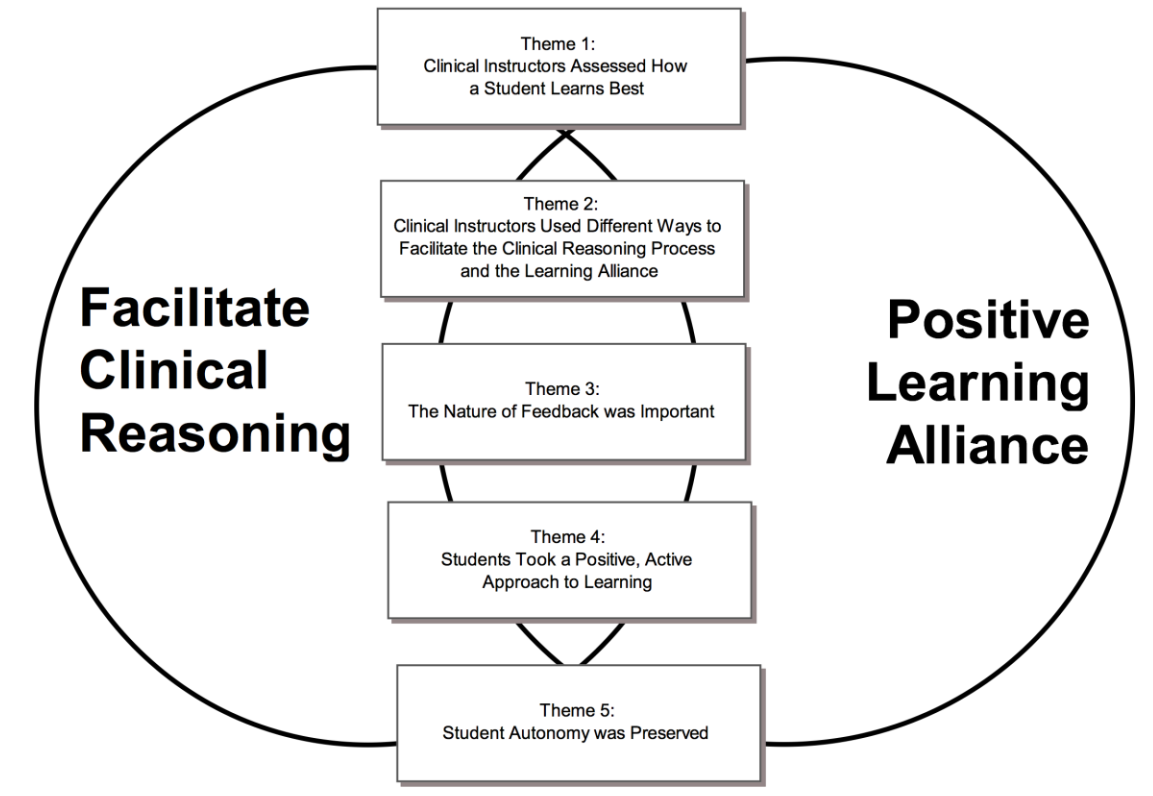


Figure 1. Schematic of the identified themes that simultaneously supported the learning alliance and the development of clinical reasoning.

Theme 1: Clinical Instructors Assessed How a Student Learns Best

All data from this theme came from the perspective of the CIs, who identified ways in which they attempted to identify where their students were in the learning process, as well as their learning styles. Nicole commented that at the beginning of the semester she has her students complete a form “asking them about how they learn best and if there are any concerns or issues that CIs should be aware of to help them with their learning” adding, “I do read those, and I do take that into consideration.” This strategy enabled Nicole to adapt her teaching style as appropriate for her students, and removed some of the unknowns as the student and CI began working together. Nicole indicated that, “I think as CIs we kind of feel out the situation with the student...and then we

determine which approach we are going to take.” Amy stated that she tended to treat her students “as a client” and attempted to assess for learning differences in her students as a way to identify students who might need more support, and Elizabeth commented that she used similar strategies with her students, to help determine which students required more guidance based on where the student was in the learning process. All of the CIs participating in the study seemed to take steps to understand and account for the learning differences of their students. These steps allowed the CIs to attend to the specific learning needs of the students, promoting a positive learning alliance. Similarly, by assessing where the students were with their knowledge and skills, the CIs were able to use their assessment as a way to provide their students with the appropriate level of challenge to their learning, resulting in further facilitation of clinical reasoning. For instance, Elizabeth explained that based on her assessment of students’ capabilities, she will let some of them “struggle a bit to find the endpoint of, oh, this isn’t working.” The student is then challenged with reasoning through their dilemma independently, prior to Elizabeth intervening. By assessing how a student learns best, CIs attempted to facilitate clinical reasoning and create and maintain a positive relationship with the specific learning needs of the student, which supported the learning alliance.

Theme 2: Clinical Instructors Used Different Ways to Facilitate the Clinical Reasoning Process and the Learning Alliance

Within this theme, three sub-themes appeared to emerge through the data analysis. These sub-themes represented ways CIs supported the development of clinical reasoning and the learning alliance at the on-campus clinic.

Theme 2a: Clinical instructors questioned their students. The participating CIs said they asked their students questions as an active strategy to foster clinical reasoning in their students. Asking questions encouraged students to verbalize their reasoning, which contributed to their understanding of the process of clinical reasoning, and also served to inform the CIs regarding where the student was in the learning process. More specifically, CIs considered the on-campus clinic as the first place where students brought things together. Nicole said,

I feel like it is our job, as clinical instructors, to help them piece that together. And to facilitate this new type of learning...I think helping the student, not necessarily by giving them the answers, but asking the right questions of them so it gets them to think and process, because they are just seeing something in a narrow scope, you know? And if we ask the right questions, it makes them think in a broader sense and look at the big picture to help them with their goal with the problem solving.

Later in the discussion, Elizabeth added “And problem solving starts with questioning – good and bad. I mean, ‘if you did something good, why? If you did something that didn’t work, why didn’t it work?’” Amy reported similar sentiments about the importance of asking students questions in an effort to understand their reasoning process and also as a way to teach students how to question themselves as a strategy for clinical reasoning. She further explained:

My goal is to get them to the point to ask themselves that question. Not necessarily to ask us, but to ask themselves the question...to see when something isn’t working, to say, “what do I need to change in this situation myself”...and that’s what we are hoping for is that we can facilitate that process and know when to ask.

The students acknowledged that questions were a strategy used by CIs to better understand their reasoning process. Rebecca appeared to appreciate that her CI would ask questions, but not directly give her the answer, resulting in her taking more ownership of

the clinical reasoning process, “so it is more of our own thinking instead of her putting the words in our mouth.” She said,

Our [CI] likes to know our clinical reasoning for everything. I mean, I think it is a lot through conversation and she wants to know exactly what you are thinking for why you are doing each specific thing and then she will kind of steer you maybe in a different direction or confirm what you are doing.

When asked specifically how her CI attempts to understand her clinical reasoning, Rebecca added,

She just asks a lot of questions, like, “what was the purpose of you doing that?” And then you will answer and then she will either confirm or kind of steer you in a different directions. Like after, for reflection. After our treatment session. And then with documentation, too.

Questioning of the students was primarily observed during group feedback sessions. For example, Elizabeth posed a question to the group asking about their understanding of a treatment strategy, but also asked a student to explain why she thought a specific incident occurred during treatment. Similarly, Nicole used general questioning to ask the group how to modify a treatment strategy, and then had each student contribute an idea to the discussion. In addition to general questions to the group, Amy asked a student: “what do you notice when you do that?” as a way to allow the student not only to provide her reasoning, but for Amy to comment and tell the student that she was on the right track, or provide feedback as to why she was not.

Farber and Koenig (2008) identified questioning strategies as an important way to facilitate clinical reasoning in students during fieldwork. The results of the current study indicated that when CIs questioned their students, they were doing so as a way to foster clinical reasoning and identify where the students were in the learning process. CIs also appeared to use questioning as a way to model their clinical reasoning process to the

students, or to train the students in the questions they might ask themselves as practitioners. As stated by Nicole, one of the CIs, she considered it her role to “facilitate learning and how you go from Point A to Point B.” Asking questions of the students was a deliberate approach to help students develop clinical reasoning. When the students responded to the questions from the CIs, the CIs were able to ascertain the students’ level of knowledge. This contributed to the CIs ability to provide feedback and input, which supported a positive relationship within the learning process. James (2005) found a similar phenomenon in her research, which she described as attending to the learning alliance.

Theme 2b: Clinical instructors used demonstration. In addition to questioning, students reported that CIs model and explain their clinical reasoning through demonstration. When discussing how her CI used this strategy, Heather commented,

I think she waits to see what we are going to do, like how it looks in action... And then if there is not a good answer she kind of – “why don’t you try this?” or, “let’s replace that activity with this one.”

Heather’s CI demonstrated a way in which she could modify the activity to better suit the needs of the client, an adaptive strategy inherent in clinical reasoning. The group continued to discuss the ways their CIs demonstrated treatment techniques to foster clinical reasoning. Heather added, “I think she likes us to see that it won’t work...because I think she wants us to learn from actually doing it.” During a group feedback session, Angela’s CI utilized active demonstration to help facilitate the learning of her students. She told her students that it was important to try the activities they were recommending for their clients, and then had the students perform a specific activity to experience how the activity felt on their bodies, reinforcing for the students not only the content of the

activity, but also as a way to show her students a strategy they might utilize to better understand the clinical reasoning behind their treatment decisions. Modeling was a strategy that Farber and Koenig (2008) also identified as facilitating clinical reasoning in fieldwork students. Similarly, by using this modeling strategy, CIs provided feedback that was specific to their students' learning needs, which served as a way in which CIs attended to the learning alliance.

Theme 2c: Clinical instructors facilitated collaboration. Both the CIs and the students reported that collaboration with their peers supported the development of clinical reasoning. All three CIs stated that they encouraged peer support and interaction as a tool for learning because they, too, utilized their peers as resources in their professional life. Amy said, "I like to try to promote their peer support as much as possible. Because I use my peers all the time." Elizabeth agreed with Amy and later added "I call them my team...we really focus on that we are colleagues." Nicole commented on the benefit of learning treatment techniques from observing each other, "I encourage my group to stay in the mat area as much as possible so that they can see each other treat...because I think you can learn from that." The CIs also discussed whether or not facilitating peer collaboration served to strengthen their relationship with individual students. Nicole said, "I think if the peers get along, it helps our – the CI – student relationship because you are dealing with positive more than you are dealing with negatives." Amy added that after a particularly tough treatment session, her clinic group let her know that they appreciated her facilitating the conversation between the group members during group feedback session, "that was actually really nice because I think they recognized a little bit more that I wasn't ripping them apart...but it was more to show them that we are here to

support them in the process...and support each other.” Elizabeth identified that collaboration might not directly serve to support the CI-student relationship, but more indirectly in that it allowed for students to use each other as resources, which was consistent with the professional experiences of the CIs.

Student collaboration was primarily observed during group feedback sessions. In these sessions, the CI posed questions to the group, resulting in both individual and group responses. Michelle said, “I would like more peer-to-peer interaction in talking about specific circumstances that happened...I think that’s when I learn best.”

Rebecca discussed the collaboration in her group feedback sessions,

It’s always us processing it. She doesn’t just – I guess I don’t mean instructional because she doesn’t just say what something is. She is like, “OK, Rebecca’s client was doing this”...and then she opens it to everyone...and then we all kind of figure it out together.

Although facilitating peer collaboration was not described in the literature as a support to the development of clinical reasoning, the study participants identified it as a strategy for supporting the students’ learning and the facilitation of clinical reasoning. Collaboration appeared to be an avenue in which students could discuss their reasoning process with their peers, impacting their knowledge and skills, resulting in a refinement of their learning needs. This increased the students’ independence in their learning process, a skill inherent in clinical reasoning. In this way, students were taking an appropriate metacognitive stance in discerning when to ask for help from their CIs. This allowed for the students to openly express their needs and elicit specific feedback from their CI, which promoted a positive learning alliance.

Theme 3: The Nature of Feedback Was Important

Another theme identified during data analysis had to do with the nature of feedback. At the on-campus clinic, feedback occurred in either verbal form during clinical treatment and group feedback sessions, or written form on clinic assignments and documentation. The study participants identified the importance of feedback, both positive and corrective in nature, as important in the development of clinical reasoning and the relationship between the CI and the student.

The CI participants discussed their approach with providing positive feedback to their students. Elizabeth explained that when her students are doing something right, she used “lots of positive feedback” whereas the more corrective feedback came generally with the written assignments. Nicole explained that she told her students, “If you don’t hear from me, if I don’t say anything, that means you are doing ok.” Amy stated that her students had recently told her that they needed more positive feedback. The students “told me I didn’t quite give them enough positives” and she identified that,

There is a lot of self-reflection that is negative self-reflection, which has made me realize that maybe I don’t give enough kudos to what is happening there. Because I feel like they are doing this incredible transformation of self from a book student learning to a therapist. And they rip themselves apart. And I sometimes don’t recognize that right away...that I let it go too far for my personal group.

As a group, the students seemed to identify struggles with a lack of positive feedback, as well as the vague nature of the positive feedback they were receiving from their CIs. Angela said, “If she doesn’t say anything about my clinic plan or come over to me, does that mean that what I am doing is really good? Or is it more that I am just not failing?” Michelle agreed, “More clarification as to what we are doing if it is good or if it is bad would be good for me. I need more clarification.” Crystal commented on the

helpful nature of written feedback, which the CIs identified as primarily used for corrective feedback. She said, “I personally have gotten more written comments...that I find helpful. More so than verbal...you can read it, digest it...have something to refer back to and say, ‘OK I am not sure what you mean by this.’” Crystal seemed to appreciate the specificity of the written feedback. Similarly, Angela mentioned a particular strategy she finds helpful in receiving written feedback from her CI,

She requires us to carry our care plans...and she will take them sometimes and write notes on them. Which I really like that, because it’s direct feedback. And it makes me a little nervous when she takes it, because I wonder if she is trying to say something good or bad about it...but I think that is good because she is trying to do it in a way that is not interrupting, but that is providing immediate feedback.

Heather considered the lack of positive feedback as having a negative impact on the relationship between her and her CI,

So it’s hard to know if - if she is just like, “yeah that’s super great. I’m just going to make it a little bit better.” Or if she is like, “you are totally failing. I am coming over to help you actually do it right.” Those are blurry lines.

All of the study participants appeared to identify the importance of feedback in the development of clinical reasoning. In general, the students indicated that they struggled with the nature of positive feedback, which was often more general than corrective feedback. They felt less able to ascertain whether or not their treatment approaches were outstanding, good, or just adequate. In this way, the students may have thought that the CIs were not meeting their expectations, which was affecting the learning alliance. Feedback that was more specific, typically in written form, even if it was corrective in nature, allowed the students to adopt a more appropriate metacognitive stance that better met their specific learning needs while still maintaining a level of independence in learning, which in turn served to support the learning alliance.

Theme 4: Students Took a Positive, Active Approach to Learning

When asked to identify what successful students did to support the learning relationship, the CIs seemed to appreciate the students who were willing to remain positive and move outside of their comfort zone and considered this supportive of the both the learning alliance and the student's clinical reasoning. Elizabeth commented,

The positive excitement to learn. When they go outside...and they find something on their own - that is huge. And especially if they are willing to share it with their peers, too...but, are they willing to connect stuff out of their own comfort zone and try new things and look it up.

Nicole added that she appreciated that as well, and Amy commented on her excitement when students began to put their "dots together" using the resources and were excited about learning and are willing to put in the work. She said,

I call it the wow factor. They wowed me...I get super excited when they come to me, and they have their book open and they say, "I have been reading about this...Can you help me with that? How can I go a little bit more with this?"

The CIs considered students' willingness to move outside of their comfort zones and challenge themselves to expand their understanding of treatment options to be a major support of the development of clinical reasoning. When students were independently exploring resources and bringing these resources to the CI to help them process, the CIs perceived the students positively, which resulted in a supportive learning alliance.

The student participants in the study acknowledged the importance of independence in their learning experience, and how that supported the development of clinical reasoning. Angela discussed how this "requires you to approach her [CI] and ask questions, too, which builds that relationship as well." Michelle agreed with the importance of taking the initiative in asking questions of the CIs, and commented on the

negative impact associated with not taking this active approach, “That’s my problem, I don’t ask the questions that I need to know the answers to, so that’s detrimental to my learning.” Similarly, Heather stated that towards the beginning of the semester she was struggling, but after she was open with her CI about “feeling overwhelmed” and talked with her she felt things were “going to change.” Later, Rebecca remarked about a similar situation with her CI, “I think we kind of had a moment of honesty with her, too, just feeling a little bit unprepared for clinic and then she identified specific areas we all needed to work on.” This led to some changes during group feedback sessions for her group, “its kind of like first let us try it and now she is seeing some areas that we need help, and here is specific help in those areas.” This independence in learning was also indicative of students taking an appropriate metacognitive stance, that attended to their learning needs, while still allowing the students to figure things out on their own. This served to support the learning alliance in that students expressed their learning needs to the CIs to help them provide the direction and feedback necessary for the student’s learning.

The students discussed their concerns about balancing their learning needs while being considerate of the CI’s time, as well as their classmates’ time during group feedback sessions. Angela explained,

I feel like they are so busy, you know. And so, I shouldn’t feel this way, but I feel like they do so much for us so you don’t want to be over-emailing them a lot, or setting office hours all the time or monopolizing the conversation.

In response to a focus group question about figuring out what questions need to be asked, Michelle said, “I kind of know, but when we are in a group, I don’t want to monopolize the group and ask all my questions, because if she answers one question, I

am going to have a question for that question.” The group members nodded their heads and Christina added, “I think I’ve gotten more comfortable asking the questions. But at the same time I do kind of think, ‘do I need to ask?’ And, ‘I don’t want to ask too much.’” To which Heather replied, “Yeah, I don’t want to sound dumb. Because there is a lot of things I don’t know that I probably should know that I am afraid to ask.” Angela followed with “Or you don’t want to sound needy, like ‘I don’t get it. I need help with everything.’ But I do.” This statement resulted in laughter from the group, in apparent agreement with Angela.

The students seemed to be using a flexible metacognitive stance by continuously balancing their learning needs with what they perceived to be the appropriate level of independence in figuring things out on their own. The students identified this balance when asked about how they might change their approach to learning during their upcoming fieldwork level II placements, now that they have had this clinical experience at the on-campus clinic. Crystal said, “I hope I will ask more questions and be more quizzical upfront versus struggling by myself.” The group then proceeded to laugh in apparent agreement. Rebecca said that she hopes she will confirm her thinking with her CI in fieldwork level II, ““OK, here is what I am thinking. This is my clinical reasoning, is that on the right track?’ And just getting some confirmation before you proceed down the path and make sure you are going the right way.” The students considered that they would offer suggestions with their questions to the CIs, demonstrating a positive and independent approach to their learning. They identified that bringing suggestions to their CIs and taking responsibility for their learning experience as a way to support both their clinical reasoning and the learning alliance with their CIs.

Farber and Koenig (2008) identified active participation of the student as one component necessary to facilitate clinical reasoning in fieldwork. Active participation by the students was identified by the CIs in this study as supporting a positive relationship between the CI and the student. James (2005) noted that there are two ways in which her participants supported the learning alliance. “First, they took deliberate steps to create or maintain a positive relationship based on the shared expectations of the student and supervisor roles within the learning process. Second, they openly expressed their learning needs and articulated clinical observations and self-assessments” (p. 137). This appeared to contribute to the maintenance of a positive relationship in that students who took this approach were more successful in meeting the expectations of the CI within the learning process. In this way, the students and CIs were better able to create a learning alliance that was based on the shared expectations of their roles. Similarly, the students participating in the current study identified the importance of independence in the learning process, or “figuring it out on their own,” balanced with knowing when to ask for help. This required the students to adopt an appropriate metacognitive stance in determining the level of assistance they required from the CI and taking the steps necessary to meet their learning goals. This active participation and open expression of learning needs by the students not only supported the development of clinical reasoning; it played a role in maintaining a positive learning alliance. When all participants in a relationship were taking active steps to foster clinical reasoning, the expectations of the student and supervisor roles were shared, resulting in a positive learning alliance.

Theme 5: Student Autonomy Was Preserved

During clinical observations, the student researcher noted that the CIs tended to stand back while their students were interacting with the clients. Nicole said that she has to make a conscious effort to do so, “I have to force myself, sometimes, to stay back.” Elizabeth expressed similar sentiments, “I have to tell my students, though, I love being in there, and so I will stay back and try not to interact.” When this was discussed during the focus group, Nicole said, “I want to empower the student to – so that’s why I want to be there, sometimes, for the learning opportunities. But not be there because I want to give the student the authority and empower them.” Similarly during clinic sessions, Amy explained that she tried to let the students be the therapist as much as possible. “I want to start the process of transitioning them to being therapists. So I talk to them as therapists...So I am already starting that self-concept of owning that I am a therapist.” The CIs considered the empowerment of the students important in encouraging the confidence of the student and supporting the students’ learning process.

From the student participants’ perspective, they appreciated when their CIs refrained from interactions that might have disrupted their relationships with clients, and reported they felt the CI-student relationship was enhanced when CIs preserved their autonomy in student-client interactions. During the student focus group, Christina identified a situation that she appreciated where her CI did not directly engage with the client, “she just kind of snuck in and gave eye contact and kind of a gesture cue and then left. So that was also helpful. So she didn’t jump in. She didn’t need to.” Christina commented that during group feedback session her CI checked in with the students to make sure they were comfortable with her level of supervision. She said,

I think she just is excited to share ideas with us, and she always tells us that she is really excited and she...apologizes sometimes for being excited, or talking too much, or jumping in too much. But I think she wants to just help us learn.

Heather discussed situations in clinic when she appreciated her CI's support of her intervention. She said her CI, "waits until there is a good moment...and then when she does introduce or show us, she very much gets us doing it as quickly as possible." She added that the brevity enables the client to barely notice the CI is there and continued describing clinic situations with her CI,

She also does this thing I really appreciate where she wants to tell you to notice something, but her way of doing it, I think, is to pretend that you noticed it too...its like camaraderie in a weird way. It's not just all clinical...informing us without being instructional.

Rebecca appreciated that her CI "is kind of behind the scenes" and will let her help come up with ideas for things to do, but then "she lets you go out and do that with the clients. So she trains us at the beginning and then you go do it and she doesn't really step in and change it while you are doing it with the client." The students clearly appreciated that their CIs considered the development of the student-client relationship an important part in the learning process of clinical reasoning.

The CIs identified that they made efforts to support the student's relationship with a client, as a way to "empower" them. Similarly, the students acknowledged how they appreciated when the CIs allow them to be the therapist with the client. James (2005) identified the influence the learning alliance can have on a student's autonomy in fieldwork. "The learning alliance can promote or inhibit self-determined motivation through its impact on students' needs for autonomy and competence" (James, 2005, p. 204). The CIs and students at the on-campus clinic appear to have a mutual

understanding of the importance of this component in supporting the learning needs of the student, which also served to support the learning alliance.

Summary

This study used both the perspectives of the CI and the students to examine the role of the CI-student learning alliance in facilitating students' development of clinical reasoning. The themes that emerged from the data appeared to be consistent with the literature about facilitating clinical reasoning and maintaining a positive learning alliance in fieldwork settings. Farber and Koenig (2008) identified ways in which clinical reasoning is facilitated in fieldwork, including the use of questioning strategies, role modeling and encouraging active participation of the student. In her theoretical model of self-regulated field-based learning based on her qualitative study of student learning within the context of occupational therapy level II fieldwork settings, James (2005) identified that metacognitive control strategies used by students and the reciprocating direction and feedback from the supervisors contributed to a positive learning alliance. The metacognitive stance and feedback strategies contributed to the themes that emerged in this study.

Implications for Occupational Therapy

This study was designed to examine the role of the CI-student learning alliance in facilitating students' development of clinical reasoning at a university on-campus teaching clinic. The development of clinical reasoning in fieldwork has been researched, but less information was available that explored the relationship between the CI and the student during fieldwork. The focus groups and clinical observations documented in this study indicated that the learning alliance and the development of clinical reasoning were

simultaneously supported at the on-campus clinic by a number of different strategies that could be used by CIs in a variety of fieldwork settings. For instance, CIs may consider assessing how their students learn best, in an effort to provide their students with the appropriate level of challenge to their learning based on the specific learning needs. This served to facilitate clinical reasoning as well as to support the learning alliance. CIs may also encourage their students to collaborate with their peers as a strategy to facilitate clinical reasoning. The collaboration between the students provided them an opportunity to refine their reasoning and questions prior to bringing specific needs or questions to the CI, which also served to support the learning alliance. Increasing the specificity of feedback to students, both verbal and written may contribute to the learning alliance in that it supports the role expectations of the supervisor. In response to more specific feedback, the students were better able to adopt a flexible metacognitive stance. The results of this study may also help students understand strategies that facilitate clinical reasoning skills when they enter fieldwork setting and as entry-level practitioners. For instance, students in fieldwork settings might consider the importance of taking ownership for their learning experience, striving for independence while still utilizing a metacognitive stance that recognizes when to ask for assistance from the CI. In addition, students seemed to appreciate CIs who supported and encouraged their autonomy with clients, which appeared to promote a positive learning alliance, while supporting their development of clinical reasoning through enhancing confidence. The results of this study may serve beneficial to CIs and students during orientation to the on-campus clinic, as a way to highlight strategies that support clinical reasoning and the learning alliance between the CI and student.

Limitations

The small number of participants and the unique setting of the on-campus clinic represent two limitations of the study. Generalization of the results of this study to more traditional fieldwork level II or fieldwork level I settings where CIs are managing client caseloads and have less availability may be more difficult. The data collection for this study occurred early in the semester for the participants, the CI-student relationship may have evolved over the course of the semester in ways not reflected in this study. Inclusion of participants from a more diverse setting might have provided different perspectives on the identified themes. Examination of the active strategies students used to promote the learning alliance was limited in this study, and a better understanding of the student perspective would serve to supplement the study results. The student researcher in this study was a graduate occupational therapy student, participating in the same educational setting as the student participants. Although efforts were made to control for bias, this was a potential area for bias.

Future Research

All the CIs that participated in this study had a significant amount of experience within the setting of the on-campus clinic. Investigating the perspective of CIs with less experience regarding how they support their student's development of clinical reasoning and the CI-student relationship in general would provide for a more rounded perspective regarding the experience level of the CI. Taking a closer look at the strategies students used to promote and support their development of clinical reasoning would provide for a more rounded perspective of the CI-student relationship. Investigations that include a larger number of participants would provide more information. In addition, research into

how the learning alliance and clinical reasoning evolves over a longer period of time, throughout the semester, or during fieldwork level II would provide further insight into how the two components interact within the CI-student relationship.

Conclusions

Results of this study appeared to simultaneously support the learning alliance and the development of clinical reasoning at the on-campus clinic at the University of Puget Sound. Five themes emerged from the data including: 1) Clinical Instructors Assessed How a Student Learns Best; 2) Clinical Instructors Used Different Ways to Facilitate the Clinical Reasoning Process and the Learning Alliance; 3) The Nature of Feedback was Important; 4) Students Took a Positive, Active Approach to Learning; and 5) Student Autonomy was Preserved. These themes appear to be consistent with the literature about facilitating clinical reasoning and maintaining a positive learning alliance in fieldwork settings. This information may provide CIs and occupational therapy students with a better understanding of strategies used in fieldwork settings that contribute to the development of an effective CI-student learning alliance and the development of students' clinical reasoning.

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Appendix

Clinical Instructor focus group questions

I. Welcome and purpose

- a. The purpose of this focus group is to gain a better understanding of the relationship between clinical instructors and occupational therapy students within the clinical educational setting, especially with respect to the development of clinical reasoning.
- b. In the interest of maintaining the privacy of participants, I ask that you please refrain from using the names of your students during this discussion
- c. Just a reminder that everything discussed in this focus group remains strictly confidential. All transcripts and observational notes from this focus group will be coded with pseudonyms and I ask that you do not discuss what is discussed here with anyone else.
- d. Are there any questions before we begin?

I. Collect participant information:

- a. General experience with clinical education
- b. Years of experience (if applicable)
- c. Areas of treatment interest

II. Definitions of clinical reasoning and the learning alliance

- a. Clinical reasoning is defined as “the process that practitioners use to plan, direct, perform, and reflect on client care” (Schell, 2009, p. 314).
- b. A learning alliance is defined as “the relationship between the student and clinical supervisor, which consists of mutually agreed upon learning goals

and tasks, a shared understanding of the learning process, and a positive relationship” (James, 2005, p. 137).

- III. Opening Question: Can you describe the ways in which you support the development of clinical reasoning in your fieldwork students?
- IV. Guiding questions:
 - a. Describe a clinical treatment situation in which the interaction between the clinical instructor and student supported the development of clinical reasoning.
 - b. Describe a clinical treatment session in which the relationship between the clinical instructor and student did not support the development of clinical reasoning.
 - c. What do you do to foster relationships with your fieldwork students that support their development of clinical reasoning?
 - d. What do students bring to the CI-student relationship that supports a productive learning relationship? Have you worked with students with whom you felt the relationship was not effective or less effective in supporting learning? What do you think contributed to that?

Student focus group questions

- I. Welcome and purpose
 - a. The purpose of this focus group is to gain a better understanding of the relationship between clinical instructors and occupational therapy students within the clinical educational setting, especially with respect to the development of clinical reasoning.
 - b. In the interest of maintaining the privacy of participants, I ask that you please refrain from using the names of your CIs during this discussion.
 - c. Just a reminder that everything discussed in this focus group remains strictly confidential. All transcripts and observational notes from this focus group will be coded with pseudonyms and I ask that you do not discuss what is discussed here with anyone else.
 - d. Are there any questions before we begin?
- II. Definitions of clinical reasoning and the learning alliance
 - a. Clinical reasoning is defined as “the process that practitioners use to plan, direct, perform, and reflect on client care” (Schell, 2009, p. 314).
 - b. A learning alliance is defined as “the relationship between the student and clinical supervisor, which consists of mutually agreed upon learning goals and tasks, a shared understanding of the learning process, and a positive relationship” (James, 2005, p. 137).
- III. Opening question: Would you please discuss your perception of successful clinical reasoning in practice?
- IV. Guiding questions:

- a. Can you describe how your CI helps you improve your clinical reasoning as you plan and carry out treatment?
- b. Describe strategies you might use to establish a positive learning relationship with your CI.
- c. Can you identify some strategies that might interfere with the development of a positive learning relationship with your CI?

Table 1

Summary of Study Participants

Name ^a	On Campus Clinic Teaching Experience ^b
Elizabeth (CI)	8 years
Rebecca (student)	
Angela (student)	
Amy (CI)	11 years
Heather (student)	
Michelle (student)	
Nicole (CI)	14 years
Crystal (student)	
Christina (student)	

^aPseudonyms were used in place of participants' real names to protect confidentiality

^bTeaching experience at the on campus clinic

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